REMARKS

At the outset, applicants' representatives thank Examiner Gitomer for the opportunity to discuss this case with him during the telephonic interview that took place on June 29, 2005. During that interview, the Examiner and the undersigned applicants' representatives discussed the outstanding rejections under 35 U.S.C. § 112, first paragraph. The amendments and remarks made herein reflect the discussion that took place during that interview.

Claims 5 to 12 are pending in the instant application. By this amendment, claims 5, 8, and 10 to 12 have been amended and new claims 13 to 18 have been added to place the claims in condition for allowance and/or appeal. Support for the amendments and new claims are found in the specification as originally filed (see specification, p.9, *l.*18 - p.10, *l.*32 and the examples on pp. 35 to 38). No new matter is added by this amendment. Applicants respectfully request that the amendments and remarks made herein be entered into the record of the instant application.

Thus, claims 5 to 18 will be pending upon entry of the instant amendment.

1. THE REJECTION UNDER 35 U.S.C. § 112, FIRST PARAGRAPH, FOR LACK OF WRITTEN DESCRIPTION, SHOULD BE WITHDRAWN

Claims 10 to 12 are rejected under 35 U.S.C § 112 first paragraph as failing to comply with the written description requirement, as allegedly containing new matter. Claims 10 to 12 have been amended to remove the proviso language, without prejudice to the applicants' right to pursue the subject matter removed from the claims in this or other applications. Amended claims 10-12 specify that the amount of antimicrobial agent is an amount effective to control bacterial infection in the oral cavity and inhibit oral bacteria-mediated systemic disease in the absence of H2 antagonist. Support for this amendment can be found in the specification, including the examples, as originally filed (see specification p.13, *l.*19 - p.17, *l.*13 and p.32, *l.*9 - p.38). Thus, applicants respectfully request the Examiner's withdrawal of the rejection.

2. THE REJECTION UNDER 35 U.S.C. § 112, FIRST PARAGRAPH, FOR LACK OF ENABLEMENT, SHOULD BE WITHDRAWN

Claims 5 to 12 are rejected for lack of enablement. According to the Examiner, the claims include Markush groups of antimicrobial agents, different forms of the composition, and H2 antagonists and/or additional therapeutic agents, but the specification fails to teach how to make and use each and every of the components in each of the claimed forms. The Examiner contends that one of skill in the art would not be able to determine the amounts, proportions or combinations for the antimicrobial agents specified in claim 5.

Claims 5, 8, 10, and 12 have been amended to clarify that the amount of antimicrobial agent effective to promote whole body health is an amount effective to control bacterial infection in the oral cavity and inhibit oral bacteria-mediated system disease. Each of the antimicrobial agents specified in claims 5 to 12 are well known to the skilled artisan, and the specification teaches that the effective amount of microbial agent "will vary with particular condition being treated, the age and physical condition of the patient being treated, the severity of the condition, the duration of treatment, the nature of concurrent therapy, the specific from (*i.e.*, salt) of the antimicrobial agent employed, and the particular vehicle from which the antimicrobial agent is applied." (see specification at p. 11, *ll.* 25-29.) The specification provides ranges for effective dosages of antimicrobial agents, which vary depending on the particular antimicrobial agent and the particular composition (see specification, p.13, *l.*19 - p.17, *l.*13 and p.32, *l.*9 - p. 35, *l.*9 and working examples on pp. 35-38). For example, the specified amount of chlorite ion for use in dentifrice and mouthwash compositions can range from greater than about 0.02% by weight (see specification, p.15, *ll.*18-25), preferably from about 0.02% to about 6.0%, and the specified dosage for stannous ions as microbial agent in the range of from about 0.25% to about 11% by weight of final composition (see specification p.13, *l.*32 - p.14, *l.*4).

Following the guidance provided in the instant specification and knowledge in the art, the skilled practitioner can readily determine, the appropriate dosages to be administered to any particular subject or patient, without undue experimentation.

Therefore, in view of the amendments to claims 5, 8, 10, and 12, the disclosure in the instant specification, and the level of skill in the art, applicants respectfully request the Examiner's withdrawal of the rejection under 35 U.S.C. § 112, first paragraph, for lack of enablement.

3. THE REJECTION UNDER 35 U.S.C. § 102(b) SHOULD BE WITHDRAWN

Claims 5 to 9 are rejected under 35 U.S.C. § 102(b) as anticipated by Singer, as decided by the Board of Appeals in its decision of 3/26/04, which discloses a method or treatment of gingivitis or periodontitis comprising the topical administration to the oral cavity of a composition comprising an H2 antagonist and, optionally, an antimicrobial anti-plaque agent and a pharmaceutically acceptable carrier. The Appeal Board rejected the claims under appeal, holding that the purported new use of promoting whole body health did not constitute a patentable difference because the preamble offered no distinct definition of the claimed invention's limitations. As discussed in detail below, the amended claims obviate this rejection.

Claims 5 to 9 have been amended so that the claims recite a method for administering an antimicrobial agent in an amount effective to *control bacterial infection in the oral cavity and inhibit oral bacteria-mediated systemic disease* in human and other animal *subjects having or at risk of developing a periodontal infection-induced systemic disease.*

Singer does not disclose the treatment specified in the claims. Instead, Singer discloses a method for preventing and treating *inflammation* in the oral cavity (*i.e.*, inflammation of the gums (gingivitis) and soft tissue aspects of periodontitis) by topical treatment of the oral cavity with a composition comprising an H2 antagonist and *optionally* an antimicrobial anti-plaque agent. Applicants submit that the Singer method does not anticipate the claimed method for several reasons. First, Singer does not disclose treating the patient population specified by the claims -- human and other animal subjects *having or at risk of developing a periodontal infection-induced systemic disease.* Second, Singer describes treating oral inflammation -- not the indication set forth in the claims -- *i.e.*, bacteria-mediated systemic disease. Third, Singer does not describe using an amount of antimicrobial agent effective to *control bacterial infection in the oral cavity and inhibit oral bacteria-mediated systemic disease* because performing the method of Singer (even with the optional combination of an H2 antagonist and an antimicrobial agent) would not necessarily result in treatment of such conditions, as discussed in detail below.

Under Section 102(b), in order for a prior art reference to serve as an anticipatory reference of a claim, the reference must disclose every element of the claim, either implicitly or explicitly (see *In re Schreiber* 128 F.3d 1473, 1477, 44 USPQ2d 1429, 142 (F.Cir. 1997). In order for a prior art reference to amount to an inherent anticipation of a claim, all the

elements of the claim must *necessarily*, *inevitably* and *always* result from the prior art disclosure; mere possibilities or probabilities are not sufficient. *In re Oelrich*, 666 F.2d 578, 581, 212 U.S.P.Q. 323, 326 (C.C.P.A. 1981), citing *Hansgirg v. Kemmer*, 102 F.2d 212, 214, 40 U.S.P.Q. 665, 667 (C.C.P.A. 1939). "The mere fact that a certain thing *may* result from a given set of circumstances is not sufficient." *Rapoport v. Dement,* 254 F.3d 1053, 1063 (Fed Cir. 2001), citing *Cont'l Can Co. USA, Inc. v. Monsanto Co.*, 948 F.2d 1264, 1269, 20 USPQ2d 1746, 1749 (Fed. Cir.1991) (emphasis in original). In order to establish inherency, "the extrinsic evidence must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill." *In re Robertson*, 169 F.3d 743 (Fed. Cir. 1999)(quoting *Continental Can Co. v. Monsanto Co.*, 948, F.2d 1264, 1268 (Fed. Cir. 1991)(internal quotations omitted)).

Rapoport v. Derwent, supra, is controlling. In *Rapoport*, the prior art reference taught the use of buspirone to treat anxiety, whereas the patent claimed the use of buspirone for treating sleep apnea, one of the underlying causes of anxiety. The *Rapoport* court determined that the prior art reference failed to anticipate (either explicitly or inherently) the claimed method for treating sleep apnea because, *inter alia*, the prior art did not disclose administering buspirone to "patients suffering from sleep apnea with the *intent to cure the underlying condition" Id.* at 1061 (*emphasis added*). The court found that the prior art did not show administration of buspirone in any specific amounts to patients suffering from sleep apnea. *Id* at 1061. Moreover, the prior art teaching of administering doses of buspirone at unspecified times or three times daily, without specifying adminstering the buspirone at bedtime, failed to anticipate the regimen described in the specification and covered by the claims -- a single dose of 20-40 mg of buspirone at bedtime. Here, the court noted that the doses discussed in the reference were "in the context of patients who are not even described as suffering from sleep apnea." *Id.* at 1063. "Inherency. . . may not be established by probabilities or possibilities. The mere fact that a certain thing *may* result from a given set of circumstances is not sufficient." *Id.* (quoting *Continental Can Co. v. Monsanto Co.*, 948, F.2d 1264, 1269 (Fed. Cir. 1991)).

The situation in the instant case is entirely analogous to *Rapoport.* Here, the Singer reference discloses a method for preventing and treating *inflammation* in the oral cavity by topical treatment of the oral cavity with a composition comprising an H2 antagonist and *optionally* an antimicrobial anti-plaque agent. Singer concerns treating patients with

inflammation of the oral cavity, *i.e.*, inflammation of the gums (gingivitis) and soft tissue aspects of periodontitis, a local condition. Singer does *not* teach treating the underlying cause of the inflammation, which according to Singer may result from a number of factors, such as build-up of bacterial-containing plaque, overbrushing or other injury to the gums (Singer, col. 1, *ll.*16-36).

In contrast, the claims of the instant application relate to controlling *bacterial infection* in the oral cavity, one of the several underlying causes of inflammation of the oral cavity, to inhibit oral bacterial mediated systemic disease, by preventing the systemic spread of bacteria and bacterial toxins. Analogous to *Rapoport*, Singer teaches treating a symptom, inflammation, whereas the instant claims relate to controlling one of the several possible causes of the inflammation, the underlying bacterial infection, and inhibiting systemic diseases that may result therefrom. As in *Rapoport*, there is no disclosure in Singer in which an antimicrobial agent is administered to patients with periodontal infection-induced systemic disease with the intent to cure the underlying condition. In fact, Singer's regimen, which requires its antagonists to treat oral inflammation could *mask* the underlying bacterial infection rather than *treat* it.

Like *Rapoport*, the dosages required by the instant claims, while overlapping, are distinct from those disclosed by the prior art reference. The Singer method requires an amount of an H2 antagonist and optionally an antimicrobial agent effective to treat inflammation. The safe and effective amount of the optional antimicrobial agent is disclosed in Singer to be from about 0.1% to about 5% by weight of the composition for treating periodontal inflammation (Singer, col.19, *ll.*4-7). Claims 5 to 9, on the other hand, require an amount of an antimicrobial agent effective to control bacterial infection in the oral cavity and inhibit oral bacteria-mediated systemic disease. The specification provides ranges of concentrations for antimicrobial agents effective for treating bacterial infections, which vary depending on the particular antimicrobial agent and the particular composition. For example, the specified amount of chlorite ion for use in dentrifice and mouthwash compositions can range from greater than about 0.02% by weight (specification, p.15, *ll.*18-25), preferably from about 0.02% to about 6.0%, and the specified dosage for stannous ions as microbial agent in the range of from about 0.25% to about 11% by weight of final composition (Specification p.13, *l.*32 - p.14, *l.4*). Such dosages are clearly distinct from Singer, which

discloses a different dosage --an amount effective to treat inflamation in the presence of an H2 antagonist, which, as noted above could very well mask the underlying bacterial infection.

Thus, Applicants assert that the Singer method for treating oral inflammation does not inherently anticipate the methods of claims 5 to 9 of treating patients having or at risk of developing a periodontal infection-induced systemic disease by using an amount of antimicrobial agent effective to control bacterial infection in the oral cavity and inhibit oral bacteria-mediated systemic disease because performing the method of Singer would not necessarily result in treatment of such conditions.

It is submitted that claims 10 to 12, which recite an amount of antimicrobial agent effective to control bacterial infection in the oral cavity and inhibit oral bacteria-mediated systemic disease in the absence of H2 antagonist, and new claims 13 to 18, which recite the additional limitation of a method comprising the step of assessing one or more whole body health indices or biomarkers in said human and other animal subject, are not disclosed nor suggested by Singer.

Therefore, applicants respectfully request the withdrawal of the rejection under 35 U.S.C. § 102(b).

4. THE REJECTION UNDER 35 U.S.C. § 103(a) SHOULD BE WITHDRAWN

Claims 10 to 12 are rejected under 35 U.S.C. § 103(a) as rendered obvious in view of Singer. Applicants believe the rejection is obviated in view of the amendment to the claims and request its withdrawal.

5. THE REJECTION UNDER 35 U.S.C. § 101 SHOULD BE WITHDRAWN

The claims are rejected under 35 U.S.C. § 101 as lacking utility. Applicants submit that the rejection is moot in view of the amended claims, which recite a specific, credible, and substantial utility and request that the rejection under 35 U.S.C. § 101 be withdrawn.

CONCLUSION

In light of the amendments and remarks above, applicants estimate that the pending claims are allowable. Applicants respectfully request that the foregoing amendments and remarks in be made of record in the instant application.

Respectfully submitted,

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